

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1 to 41 (cancelled)

42. (new): A voltage variable assembly comprising:
- a printable circuit board, the circuit board including:
 - a binder having a non-solid state and a cured state;
 - a plurality of insulative particles; and
 - a plurality of conductive particles cooperating with the plurality of insulative particles, wherein the plurality of insulative particles and the plurality of conductive particles cooperate with the binder to define a voltage variable material, and wherein the binder defines an at least substantially planar substrate when the binder is in the cured state; and
 - a pair of electrodes carried along at least one surface of the substantially planar substrate, and wherein the voltage variable material is configured to provide circuit protection during an electrostatic discharge event.
43. (new): The voltage variable assembly of claim 42, wherein the plurality of conductive particles have a bulk conductivity greater than 10 (ohm-cm)^{-1} .
44. (new): The voltage variable assembly of claim 42, wherein the plurality of conductive particles include a material selected from the group consisting of: nickel, carbon black, aluminum, silver, gold, copper and graphite, zinc, iron, stainless steel, tin, brass, and alloys thereof, and conducting organic materials, such as intrinsically conducting polymers.

45. (new): The voltage variable assembly of claim 42, wherein the binder includes one or more of the materials selected from the group consisting of: a thermosetting resin, an unsaturated polyester resin, polyimide resin; phenolic resin, an epoxy resin, a polyimide film, a flame retarding agent, an adhesive, a curing agent, and a reactive siloxane oligomer.
46. (new): The voltage variable assembly of claim 42, wherein the printed circuit board further includes a meshed fabric and an epoxy resin that impregnates the meshed fabric.
47. (new): The voltage variable assembly of claim 46, wherein the meshed fabric includes glass fibers.
48. (new): The voltage variable assembly of claim 42, wherein the voltage variable material further includes a plurality of semi-conductive particles.
49. (new): The voltage variable assembly of claim 42, which is part of a multi-layer printed circuit board.
50. (new): The voltage variable assembly of claim 49, wherein at least a plurality of the multiple layers of the printed circuit board include voltage variable material.

51. (new): A printed circuit board comprising:
- a plurality of fibers;
 - a binder;
 - a plurality of insulative particles; and
 - a plurality of conductive particles, wherein the insulative and conductive particles are mixed with the fibers and binder to define a voltage variable material in the form of an at least substantially planar surface;
 - a plurality of circuit traces carried along at least one surface of the substantially planar surface; and
 - at least one electrical component in electrical communication with at least one of the plurality of circuit traces, wherein the voltage variable material is configured to protect the at least one component during an electrostatic discharge event.
52. (new): The printed circuit board of claim 51, wherein the plurality of conductive particles have a bulk conductivity greater than 10 (ohm-cm)^{-1} .
53. (new): The printed circuit board of claim 51, wherein the plurality of conductive particles include a material selected from the group consisting of: nickel, carbon black, aluminum, silver, gold, copper and graphite, zinc, iron, stainless steel, tin, brass, and alloys thereof, and conducting organic materials, such as intrinsically conducting polymers.
54. (new): The printed circuit board of claim 51, wherein the binder includes one or more of the materials selected from the group consisting of: a thermosetting resin, an unsaturated polyester resin, polyimide resin; phenolic resin, an epoxy resin, a polyimide film, a flame retarding agent, an adhesive, a curing agent, and a reactive siloxane oligomer.
55. (new): The printed circuit board of claim 51, wherein the plurality of fibers includes a meshed fabric and an epoxy resin that impregnates the meshed fabric.

56. (new): The printed circuit board of claim 51, further comprising a plurality of semi-conductive particles mixed with the binder.

57. (new): The printed circuit board of claim 51, which includes multiple layers of the at least substantially planar surfaces.

58. (new): The printed circuit board of claim 58, wherein at least a plurality of the multiple layers include voltage variable material.

59. (new): A voltage variable assembly method comprising:
preparing a printable circuit board, including (i) mixing a plurality of conductive particles with a plurality of insulative particles and a binder to define a voltage variable material ("VVM") and (ii) curing the VVM to form an at least substantially planar substrate; and
providing a plurality of electrodes along at least one surface of the substrate, the VVM being configured to provide circuit protection during an elastostatic discharge event.

60. (new): The method of claim 59, wherein preparing the printable circuit board includes combining the at least substantially planar substrate with at least one additional substrate.

61. (new): The method of claim 59, wherein preparing the printable circuit board includes applying the particle-carrying binder to a woven or non-woven material via a process selected from the group consisting of: (i) pulling the material through a bath of the binder; and (ii) spraying the binder onto the material.